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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,186	05/06/2005	Mats Leijon	37399-400300	5301
27717 7590 08/25/2008 SEYFARTH SHAW LLP 131 S. DEARBORN ST., SUITE 2400 CHICAGO, IL 60603-5803				
EXAMINER				
TAMAL, KARL I				
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2834				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/534,186

**Applicant(s)**

LEIJON ET AL.

**Examiner**

KARL I.E. TAMAI

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12, 15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 15, and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The amended title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The examiner suggest: "power storage system with low voltage and high voltage windings for a vehicle driving system".

### ***Drawings***

2. The drawings filed on 5/6/2005 are objected to for the reasons cited on the attached Draftsman's Review. Applicant alleges that new drawings have been filed to overcome the draftsmans objections, however no replacement drawings were filed or are present in the file wrapper as accompanying the RCE filed 6/30/2008.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 8, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson et al. (Stevenson)(US 6753619) and Kawamura (US 20020060505). Stevenson teaches a power storage system for a hybrid drive vehicle having a driving system with at least one electric apparatus 14/16 and a power storage 12 having a stator-provided winding 38 and at least one rotor with a magnetic-flux generating permanent magnets 40, where the rotor is connected to a flywheel 30 for storage of energy in the form of kinetic energy in at least one rotary mass. The power storage being arranged to transmit power to and from the electric apparatus by the controller 14 (see col. 4, lines 23-45). Stevenson teaches the stator winding 38 is wound to extend in the air gap between the core 36 and the magnet 38 (as shown in figure 3). Stevenson does not teach the stator having a first winding arranged to operate at low voltage and a second winding to operate at high voltage with the first and second windings being arranged to operate independently of each other. Kawamura teaches generators have multiple windings to generate various voltages such as 12-24 V for low voltages and 100-200 V for high voltages for different power requirements on a vehicle. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the power system of Stevenson with the low and high power windings transmitting power to and from the motor/generator to meet the various power requirements on a vehicle as taught by Kawamura.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson et al. (Stevenson)(US 6753619) and Kawamura (US 20020060505), in further view of Tanaka (US 6172435). Stevenson and Kawamura teach every aspect of the invention except the rotor having a squirrel cage winding. Tanaka teaches the flux generator device on the rotor can be a squirrel cage 19 or a permanent magnet (col. 5, line 19) to operate as a motor/generator, however the squirrel cage is the preferred embodiment in the high speed flywheel. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the power system of Stevenson and Kawamura with magnetic flux generator being a squirrel cage because Tanaka teaches that it is the preferred embodiment in the high speed flywheel and because selection between known equivalents is within the ordinary skill in the art.

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson et al. (Stevenson)(US 6753619) and Kawamura (US 20020060505), in further view of Ueyama et al. (Ueyama)(US 5739609). Stevenson and Kawamura teach every aspect of the invention except the rotor flywheel supported by magnetic or sliding bearings. Ueyama teaches a rotor supported by magnetic and sliding bearings to provide high speed rotation of the rotor and safe touchdown bearings for protecting the motor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the power system of Stevenson and Kawamura with magnetic bearings and slide bearings to provide high speed rotation.

8. Claims 10, 11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson et al. (Stevenson)(US 6753619) and Kawamura (US 20020060505), in further view of Leijon (WO 97/45935). Stevenson and Kawamura teach every aspect of the invention except the operating voltage is greater than 380 and one of the windings having of a conductor surrounded by a first semiconducting layer surrounded by a layer of fixed insulation surrounded by a second semiconducting layer. Leijon teaches rotary electric machines operating voltages greater than 380 (page 1, line 22) to be used in conjunction with a power station. Leijon teaches that it is known to provide one of the windings 6 (figure 2)(pg. 14, lines 18-27) with a conductor surrounded by a first semiconducting layer 32 surrounded by a layer of fixed insulation 33 surrounded by a second semiconducting layer 34 to provide a generator with high voltage cable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the power system of Stevenson and Kawamura with winding having a conductor surrounded by a first semiconducting layer surrounded by a layer of fixed insulation surrounded by a second semiconducting layer to provide a high voltage winding that can be used in conjunction with a power station, as taught by Leijon, and because selection of the operating range has been held to involve only routine skill in the art (see *In re Aller*, 105 USPQ 233).

9. Claims 10, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson et al. (Stevenson)(US 6753619) and Kawamura (US 20020060505), in further view of Smith et al. (Smith)(US 6163097). Stevenson and

Kawamura teach every aspect of the invention except the system operating over 380 V and the rotor having a first core, second core, and a third core with the first winding of the stator being arranged between said first and second cores and the second winding of the stator being arranged between said second and third cores. Smith teaches the operating voltage can be 480 V. Smith teaches a rotor 15 (see Fig. 3) having a first core 14, second core 14, and a third core 14 with the first winding 100 of the stator being arranged between said first and second cores and the second winding 100 of the stator being arranged between said second and third cores to provide an economical and high powered motor generator. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the power system of Stevenson and Kawamura with the rotor having a first core, second core, and a third core with the first winding of the stator being arranged between said first and second cores and the second winding of the stator being arranged between said second and third cores to provide an economical and high powered motor generator, and with the operating voltage above 380 to provide 480 V as taught by Smith.

### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-12, 15, and 16 have been considered but are not persuasive. Applicant's argument about Colello are not persuasive because Colello is not relied upon. Applicant's argument that Colello and Stevenson are equivalent references there the arguments must be equally compelling is not persuasive. The Stevenson provides the claimed invention as disclosed above in

combination with Kawamura. Applicant's argument regarding a flywheel for use in a vehicle, is not persuasive because Stevenson line 1 clearly recites the flywheel 30 is for an energy storage system for a vehicle. Applicant's argument regarding providing power to and from the flywheel during high power is not persuasive because the limitation is not claimed and because that is the definition of a flywheel, to store the energy when you have it and to take energy when you need it.

Applicant's argument that the rejection is improper because the references cannot be combined is not persuasive. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In the instant application, the application both references are for electric machines in a vehicle, more particularly to permanent magnet rotors electric machine for vehicles. Applicant's argument regarding the voltage range of Kawamura is not persuasive because the voltage would be suitable to maintain rotation of a spinning flywheel and because the Applicant is considering the reference alone, when Stevenson clearly teaches the motor generator for a flywheel in a vehicle. Applicant's argument that Kawamura is a only a generator is not persuasive because the permanent magnet rotor electric machine can be operated as a motor or a generator as taught by Stevenson.



***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (571) 273 - 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Karl I Tamai/  
PRIMARY PATENT EXAMINER  
August 18, 2008